6M GENERAL ANTENNA INFORMATION

All the Loop Antennas manufactured by Loops-N-More are designed to provide performance with little or no maintenance required. The design is centered on the half-wave dipole. The antenna was designed primarily for the weak signal operator (CW-SSB) in that they are horizontal polarized and omnidirectional. Some of the applications include mobile/rover, net monitoring and Amateur operation with restrictive CC & R's. The current models have been certified at 750W CW, 1000W SSB. In addition, these loops have good bandwidth and virtually no weather detuning. The 6 Meter antenna is assembled, tuned and tested at the factory to the CW-SSB portion of the band to make certain you receive a properly functioning antenna.

6M ANTENNA ASSEMBLY

This section generally only applies if the antenna was shipped to you. The 6M antenna is designed in such a way that it can be shipped disassembled and be easily reassembled because of its size. The antenna is simple to assemble. See the appendix (page 5) for a picture of a 6M loop for a reference during assembly and installation. The assembly consists of the following components:

- The match box which also is the main antenna mount. This assembly includes:
  - Four 1/4” bolts, lock washers, and nuts
  - Two V-Block Saddles
- Two 1/4-wave length antenna elements (5/8” aluminum tubing). One of the elements has a 1/2” x 5” Insulator mounted in one end of the element.
- Two 28” fiberglass support rods and connecting hardware (Clevis Pins,Cotter Keys, and Hitch Pins)
- Support Rod Mounting Bracket (includes an additional V-Block Saddle and #10 hardware).

Tools Needed to Assemble:
- 5/16” deep socket or wrench
- 1/4” socket or wrench
- Phillips screwdriver
- ‘Medium’ Loctite: Suggested especially when mounted mobile.

Note: We mark the major parts with removable labels to make it easier to identify them during assembly.

Assembly Steps:
1. Place the match box with antenna connector facing up and the metal plate towards you.
2. Orient the 2 antenna elements with the small aluminum angle brackets mounted on the elements so they are facing up and the ends of the elements with the #6 bolts towards the junction box.
3. Remove the #6 bolts from the antenna elements and slip the elements over the respective element mounting tubes. Align the holes in the elements and the element mounting tubes and secure the elements to the tubes with the #6 bolts, lock washers and nuts.
4. Slip the unattached end of the 1/2” x 5” insulator into the open end of the antenna element (note there is a set screw in the element that needs to be removed before seating the insulator). Look for the screw hole (high-lighted w/marker) in the insulator and align it with the screw hole in the

element then set the screw to lock the insulator in place - this spacing is what fine tunes the antenna to the desired frequency range.

5. The final step is to mount the loose ends of the 2 fiberglass support rods (use the clevis pin through the rod and then the aluminum angle) to the respective aluminum angle brackets that are located on the bottom-side of each of the antenna elements. Make sure the rods are to the outside of the brackets, then insert the hitch pin into the clevis pin (note that you want to insert the hitch pin all the way - don't stop at the first notch. The hitch pin will "dangle" when inserted properly).

The antenna is ready for you to mount to your mast. Reference the Specific 6M Antenna Mounting section below.

Note: If you have any problems in the assembly process just give us a call - see the contact information on the website.

GENERAL INSTALLATION TIPS

It is impossible to cover every antenna installation, but some general suggestions can be made. All Loops-N-More Loop Antennas are designed to operate either mobile or base. For installation at your shack study your intended antenna location carefully, keep clear of power lines (safety) and telephone lines (interference). If mounting mobile make sure to ALWAYS place the antenna loop INSULATOR towards the REAR of the vehicle and it's MOUNT towards the FRONT (Failure to do so could result in loop damage from excess vibration). In all cases remember that you cannot over engineer the mounting if it looks weak, it probably is and always mount the loops with the coax connector facing down. Try to install your antenna at least one wavelength or more from other antennas or metal structures. If not possible to maintain the 1 wavelength distance one can usually get the loop to tune if you can get a minimum distance of at least 3 to 4 feet. Exceptions to this would be stacking 2 Loops-N-More antennas on a common mast. It is suggested that you weatherproof the coax connections. An inexpensive method to weatherproof the connection is to use Scotch brand 33+ Electrical Tape - no substitutes. Always start your taping low and tape up, allowing the tape to overlap each other. Do not break the tape by pulling it, cut the tape with scissors or a knife, and try not to stretch the tape more than necessary especially just before cutting the tape. Another workable weatherproofing solution is the use of coaxial seal, and is available at many stores including Radio Shack. Note that some like to tape and then apply the seal which allows for easier removal of the seal.

Remember to keep your antenna feed line length SHORT!

SPECIFIC 6M ANTENNA MOUNTING

You can reference the picture in the appendix (page 5) to help facilitate the installation. Note that the pictures are of a version of the loop before the clevis pins were substituted for the bolts for mounting the fiberglass support rods. Orient the antenna where the elements are on the top (the SO-239 facing down) and make sure the fiberglass support rod system is on the bottom side of the antenna. Place the two V-Block Saddles on the opposite side of the mast, then tighten the 1/4" bolts evenly.

The next step is to mount the Support Rod Mounting Bracket to the mast. Placing the V-Block Saddle on the opposite side of the mast finger tighten the Support Rod Mounting Bracket with the #10 Bolts. Slide the Support Rod Mount up or down on the mast to level the front of the loop and then torque the Support Rod Mounting Bracket. If running the loop mobile it is recommended that Medium Loctite be applied to all bolt/nuts.

6M ANTENNA STACKING

It is impossible to cover every stacked antenna configuration, but some general stacking guidelines can be made. Specific configuration guidelines can be provided as needed (Appendix A as required).

The table below depicts the recommended loop stacking distance.

Band	Tuned Freq.		Stacked Loops
6M	50.2 Mhz		*8' to 12' (12' preferred)

*Note: 1/2 to 5/8 wavelength.

If using the Loops-N-More supplied phasing harness it is 3/4 wavelength, corrected for the velocity factor, 75 ohm coaxial cable fitted with PL-259 connectors. Place both antennas with the SO-239 connectors facing down. At the unused port of the "T" connection, connect your 50 ohm (low loss) feed line. NOTE: The supplied phasing harnesses may have a manufactured "T" connection built into the harnesses (determined by supplier availability) or a T-Connector. Because the phasing harness is 3/4 wavelength and the loop spacing is less than the phasing harness length there is extra coax that needs to be tied back to the mast. Theoretically the phasing harness should present the same impedance as a single loop, but you may need to re-tune (see the tuning instructions in the next section) the loops slightly for the lowest SWR - generally distributing the adjustment between the two loops.

Loops-N-More LOOP ANTENNA TUNING

Every antenna manufactured by *Loops-N-More* is assembled and tuned before shipment. Generally, the CW-SSB calling frequency is the tuning point for most bands. An exception is 6M, the 6M antenna is tuned such that at 50.0 the SWR is no more 1.4 and dropping to 1.2:1 or less at 50.200 and yet perform extremely well up to the upper end of SSB operation with an excellent VSWR. All antennas are tuned at the factory 8 feet above ground. It offers a good compromise between mobile or base operation. If you find it necessary to tweak the tuning of the antenna, the following suggestions are offered. Make certain your test equipment is designed for the intended frequency. Many SWR bridges do not work on VHF and above frequencies. Antenna analyzers do a much better job than SWR bridges do because it "looks" at the same system that the transceiver/amplifier "sees" and does not require extra coaxial cable jumpers. Know the general performance characteristics of your test equipment in advance. For example: MFJ antenna analyzers will render a 'higher' SWR reading when the batteries are low. If the antenna match is in question, try a second test instrument to compare with the first measurements. Where the 2 dipole elements connect at the insulator, remove the set screw from one side and slide the element in or out to facilitate adjustment - note that the aluminum elements may be a little “springy” and sometimes have a tendency to move outward. We use a push pin or upholstery tack to hold the elements in place as required until we finish tuning and get the set screw in place. Moving the elements CLOSER together LOWERS the resonant frequency and moving the elements OUTWARD RAISES the resonant frequency- it's that simple. After you have reached the adjustment you desire it is a good idea to mark the insulator at the end of the element in case it should slip and then replace the set screw. Please note that we can’t guarantee any of the antennas will adjust to a frequency outside of the design bandwidth from the calling frequency. Remember, you are welcome to contact us if you feel our assistance is required in any way.

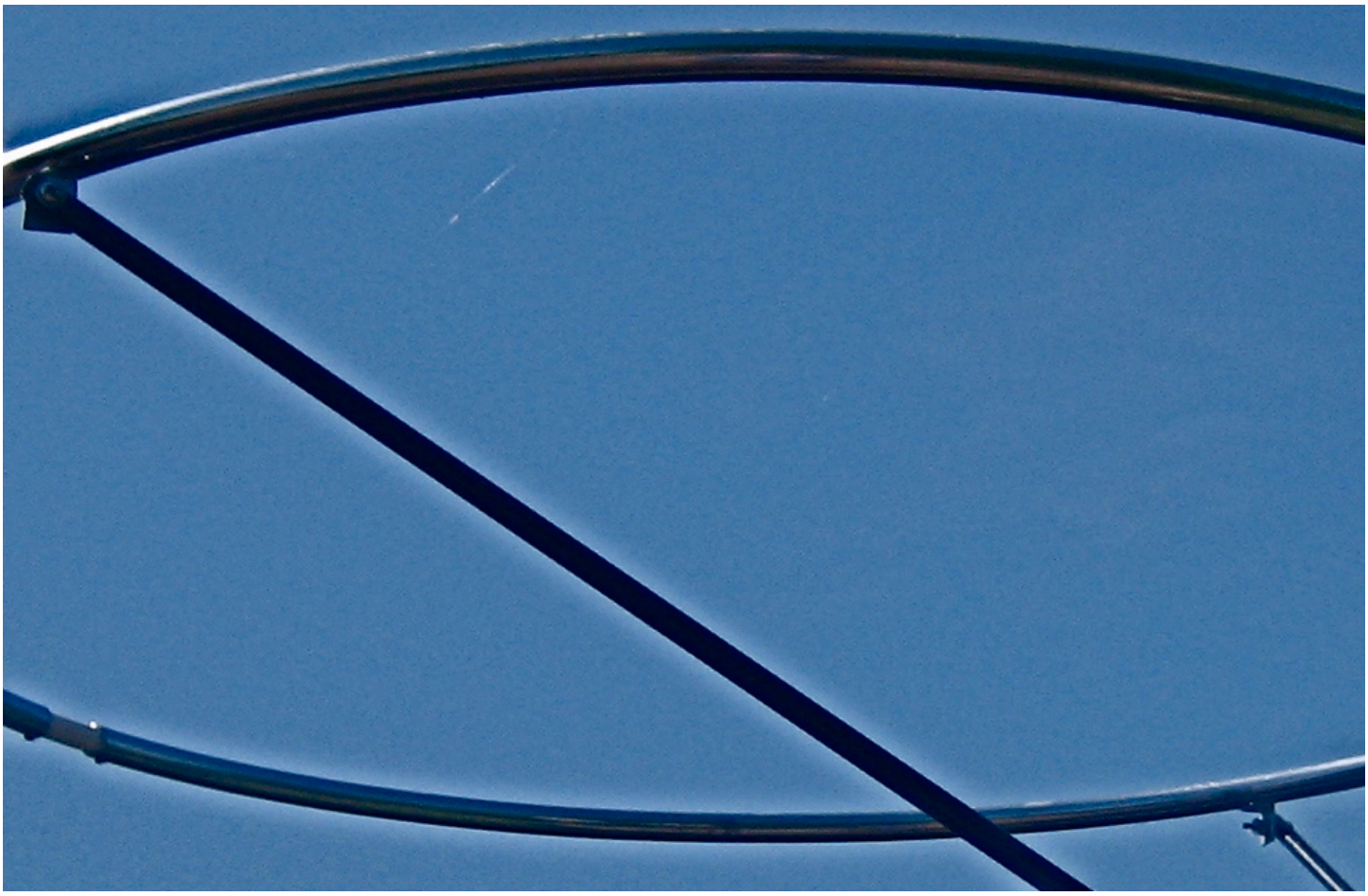
We would appreciate it if you could take the time and let us know how the installation went and how the antenna performs. If you care to we would like to receive any pictures of your installation that you would like to share. Please forward your comments and pictures to loopsnmore@gmail.com. Any feedback on these instructions would be appreciated as well. We want to make sure the documentation is clearly presented and easy to follow.

Thanks for purchasing a *Loops-N-More* Antenna and we believe you will get years of great service out of it!

IMPORTANT

IN MOBILE INSTALLATIONS ALWAYS PLACE THE LOOP ELEMENTS TOWARDS THE REAR OF THE VEHICLE AND IT’S MOUNT TOWARDS THE FRONT OF THE VEHICLE

Appendix



Note: The bolts mounting the fiberglass support rods (both ends) have been replaced with clevis pins.